adjusted to any desired height upon the plate, and thus the instrument is rendered capable of measuring pivots of almost any size.

Washington, 1878, *May* 22.

Spectroscopic Results for the Motions of Stars in the Line of Sight, made at the Royal Observatory, Greenwich. III.

(*Communicated by the Astronomer Royal.*)

The Results for Star Motions here given are in continuation of those printed in the *Monthly Notices* for 1876, May and November, and the general arrangement is the same.

Up to 1877, May 2, the observations were made with the ten-prism spectroscope (two or four prisms only being used for star work), and the method of observation has been sufficiently described in preceding communications. On 1877, August 23, the half-prism spectroscope was brought into use, but the observations suffered interruption during the oppositions of *Mars* and *Saturn*, and it was not till 1877, November 14, that this work was again brought into regular train. The principle of the new spectroscope is fully described in a paper in the *Proceedings of the Royal Society*, No. 179, 1877; and it may be sufficient to state here that the full train consists of two compound half-prisms, each being the half of a direct-vision prism, cut in two by a plane perpendicular to the base. Either one or two of the half-prisms can be used at pleasure: with one half-prism a dispersion of 20° from A to H, equivalent to four prisms of 60°, is obtained; and with two half-prisms a dispersion of 75° from A to H, equivalent to fifteen prisms of 60°. The number of half-prisms used is denoted by the Roman numerals I and II. The full dispersion of 75°, which is far greater than any hitherto used for stellar observations, has been applied recently to some of the brighter stars, including one of the second magnitude, and no difficulty has been experienced in making satisfactory comparisons with this high power. As a check against possible instrumental error arising from maladjustment of the spectroscope, comparisons have been regularly made, either before or after the observations, with the spectrum of the Moon or with that of the sky, the results of which are given at the end of the table.

Motions of Stars in the Line of Sight in Miles per Second.

(+ denotes Recession; − Approach.)

One division in the width of the slit of the Ten-prism Spectroscope corresponds to 0·0013 inch; one revolution of the slit screw of the Half-prism Spectroscope corresponds to 0·01 inch; the weights are on a scale 1–5 for *each* observation; the Means have been taken for the whole series of observations, including former results.

The initials W.C. and M. are those of Mr. Christie and Mr. Maunder respectively.

Date.	Observer.	No. of Measures.	Weight.	No. of Prisms.	Position-Circle.	Width of Slit.	Line.	Earth's Motion in Miles per Sec.	Concluded Motion of Star. Measured.	Concluded Motion of Star. Estimated.	Remarks.
					°	d d					
α Andromedæ.											
1876 Nov. 17	M.	2	2	2 & 4	6	2·9 & 3·1	F	+11·6	...	−69·1	Direct comparison.
Dec. 6	M.	2	3	4	6	2·8 & 4·0	F	+15·1	−39·1	−37·5	Indirect comparison; star line very difficult to bisect.
				Mean, Ten-prism Spectroscope					−34·4	−55·2	Weight 16.
α Arietis.											
1878 Feb. 6	M.	3	6	I	5	...	b_1	+18·2	+63·1	+45·5	Indirect comparison; spectrum rather tremulous.
Aldebaran.											
1877 Dec. 31	W.C.	2	4	I	95	...	b_1	+10·1	+22·5	+ 1·8	Indirect comparison.
31	M.	2	4	I	95	...	b_1	+10·1	+21·2	+18·5	Indirect comparison.

1878 Jan.	10	M.	2	4	I	95	...	b_1	+12·8	+20·8	+20·1	Indirect comparison; spectrum very tremulous; definition poor.
	23	M.	2	2	I	95	...	b_1	+15·6	+38·2	+41·3	Indirect comparison; definition very bad.
	29	M.	2	2	I	95	...	b_1	+16·6	+15·9	+ 4·8	Indirect comparison; spectrum very tremulous; observation very difficult.
	Apr. 8	M.	2	6	II	5	r 0·072	b_1	+13·8	+15·2	+18·0	Indirect comp.; definition only moderate.
						Mean	Ten-prism Spectroscope			+35·1	+48·7	Weight ½.
							Half-prism Spectroscope			+20·8	+16·4	Weight 22.

Capella.

1876 Nov.	1	M.	1	2	2	6	d 3·8	F	−11·1	...	+67·0	Direct comparison.
	17	M.	2	3	4	6	3·8 & 1·4	F	− 7·0	...	+31·4	Direct comparison.
	17	M.	1	1	6	6	2·1	b_1	− 7·0	...	+61·2	Direct comparison.
1878 Mar.	15	M.	2	8	I	5	r 0·085	b_1	+17·0	+39·9	+42·0	Indirect comparison.
	16	W.C.	3	2½	I	120	0·080	F	+17·0	...	+34·0	Direct comparison.
	16	W.C.	3	7	I	120	0·073	b_1	+17·0	...	− 2·6	Indirect comp.; the bright line of the micrometer being ragged, the comparison was uncertain.
	25	M.	2	10	I	95	0·151	F	+16·4	+15·9	+20·9	Indirect comp.; definition very good.
	Apr. 1	M.	2	6	I	5	0·128	b_1	+15·7	+55·8	+57·0	Indirect comp.; spectrum very tremulous.
						Mean	Ten-prism Spectroscope			+16·0	+30·9	Weight 18.
							Half-prism Spectroscope			+33·9	+27·3	Weight 29.

Date.	Observer.	No. of Measures.	Weight.	No. of Prisms.	Position-Circle.	Width of Slit.	Line.	Earth's Motion in Miles per Sec.	Concluded Motion of Star. Measured.	Concluded Motion of Star. Estimated.	Remarks.
					°	d			′	′	
β Orionis.											
1877 Mar. 10	M.	2	3	4	2½	2·5	F	+15·8	+ 7·2	+ 9·4	Indirect comparison.
Dec. 31	M.	3	6	I	95	...	F	+ 7·0	+20·0	+14·5	Indirect comparison; definition fair.
1878 Jan. 10	M.	3	7	I	95	...	F	+ 9·5	+26·0	+21·6	Indirect comparison; definition poor.
23	W.C.	3	9	I	95	...	F	+12·2	...	+17·9	Indirect comparison for first two obs.; direct for last.
29	M.	3	3	I	95	...	F	+13·2	+14·1	+13·0	Indirect comparison; spectrum very tremulous; definition very poor.
Feb. 6	M.	2	2	I	5	...	F	+14·4	+34·9	+38·4	Indirect comp.; spectrum very tremulous.
Mean { Ten-prism Spectroscope									+18·5	+20·2	Weight 8.
Mean { Half-prism Spectroscope									+23·0	+19·1	Weight 22½.
β Tauri.											
1878 Jan. 29	M.	3	3	I	95	...	F	+14·2	− 9·8	−10·2	Indirect comparison; spectrum steady; definition fair.
γ Orionis.											
1878 Jan. 29	M.	5	10	I	95	:::	F	+14·0	− 0·5	− 2·4	Indirect comparison.
29	M.	1	2	I	95	:::	F	+14·0	...	−14·0	Indirect comparison.
Feb. 17	W.C.	2	4	I	0	:::	F	+16·9	+ 2·8	+11·0	Indirect comparison.
Mean: Half-prism Spectroscope									+ 0·4	− 0·5	Weight 15.

δ Orionis.

1877 Dec. 31	M.	1 est.	1	I	95	...	F	+ 5·9	...	−18·0	Direct comparison.
1878 Jan. 10	M.	2	1	I	95	...	F	+ 8·7	+21·1	+17·5	Indirect comparison; star faint; definition bad.
23	W.C.	2	3	I	95	...	F	+11·9	...	+ 0·0	Indirect comparison.
Feb. 18	M.	2	2	I	6	...	F	+16·1	+34·6	+45·3	Indirect comparison.
					Mean	Ten-prism Spectroscope			+25·4	+21·9	Weight 7.
						Half-prism Spectroscope			+30·1	+12·8	Weight 5.

ε Orionis.

1877 Mar. 10	M.	2	0	4	2½	...	F	+16·9	(−46·1)	...	Star line scarcely visible; observations discordant.
10	M.	2	6	2	2½	4·6 d	F	+16·9	−48·7	−61·4	Indirect comparison.
Dec. 31	M.	2	3	I	95	...	F	+ 5·5	+29·9	+18·7	Indirect comparison; star line very faint.
1878 Jan. 23	W.C.	1	2	I	95	...	F	+11·6	...	+24·5	Indirect comparison.
Feb. 18	M.	3	3	I	6	...	F	+15·9	+20·9	+23·3	Indirect comparison.
					Mean	Ten-prism Spectroscope			−48·7	−61·4	Weight 6.
						Half-prism Spectroscope			+25·4	+21·9	Weight 7.

ζ Orionis.

1878 Feb. 18	M.	2	2	I	6	...	F	+15·7	+17·4	+29·8	Indirect comparison.

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α Orionis.

Date.	Observer.	No. of Measures.	Weight.	No. of Prisms.	Position-Circle.	Width of Slit.	Line.	Earth's Motion in Miles per Sec.	Concluded Motion of Star. Measured.	Concluded Motion of Star. Estimated.	Remarks.
					°	d d					
1877 Feb. 28	M.	3	3	2	6	1·4 & 2·0	b_4	+17·2	+19·2	+17·1	Indirect comparison; definition poor; Moon bright.
						d					
Mar. 10	M.	2	8	4	$2\frac{1}{2}$	2·6	b_4	+17·8	+22·1	+11·0	Indirect comparison; star line seen well.
Dec. 31	M.	2	4	I	95	...	b_4	+ 4·2	+16·9	+14·9	Indirect comparison; spectrum tremulous; definition variable.
1878 Feb. 18	M.	3	12	I	6	...	b_1	+16·1	+33·9	+36·4	Indirect comparison; definition good.
						r					
Mar. 15	M.	2	3	I	5	0·098	b_4	+17·9	+16·8	+15·8	Indirect comp.; spectrum tremulous.
Apr. 1	M.	3	12	I	5	0·128	b_1	+17·1	+20·5	+19·3	Indirect comparison; spectrum tremulous, but definition fair.
8	M.	3	8	II	5	0·072	b_1	+16·3	+ 9·0	+ 9·5	Indirect comp.; spectrum tremulous.
					Mean	Ten-prism Spectroscope			+21·3	+12·7	Weight 11.
						Half-prism Spectroscope			+21·6	+21·8	Weight 39.

β Aurigæ.

						r					
1878 Apr. 11	M.	4	2	I	5	0·072	F	+15·6	+11·5	+22·3	Indirect comp.; star line very difficult.

Sirius.

1877 Feb. 28	M.	2	5	4	6	$5^{d}.1$ & $2^{d}.7$	F	+12·2	+ 9·3	+14·5	Direct comparison; definition poor; Moon bright.
1878 Feb. 17	W.C.	4	5	I	0	...	F	+10·5	+22·1	+ 8·3	First two comps. direct; last two indirect.
18	M.	2	6	I	6	...	F	+10·7	+30·4	+32·8	Indirect comparison.
Mar. 25	M.	2	4	I	95	$0^{r}.151$	F	+14·1	+23·2	+41·8	Indirect comparison; spectrum very tremulous.
						Mean { Ten-prism Spectroscope			+19·9	+24·8	Weight 29.
						Mean { Half-prism Spectroscope			+25·7	+27·0	Weight 15.

Castor.

1877 Mar. 10	M.	1	2	4	$2\frac{1}{2}$	$3^{d}.4$	F	+16·2	− 3·9	+ 5·7	Indirect comparison.
1878 Feb. 25	M.	2	2	I	95	...	F	+13·9	+26·9	+38·4	Indirect comparison; star line ill defined.
Mar. 25	M.	2	7	I	95	$0^{r}.141$	F	+17·6	+33·7	+30·5	Indirect comparison.
30	M.	2	2	I	5	0·073	F	+17·9	+54·4	+43·7	Indirect comparison; definition poor; and observation difficult.
						Mean { Ten-prism Spectroscope			+25·3	+22·3	Weight 19.
						Mean { Half-prism Spectroscope			+36·2	+34·3	Weight 11.

Date.	Observer.	No. of Measures.	Weight.	No. of Prisms.	Position-Circle.	Width of Slit.	Line.	Earth's Motion in Miles per Sec.	Concluded Motion of Star. Measured.	Concluded Motion of Star. Estimated.	Remarks.
					°	d					
Procyon.											
1877 Mar. 5	M.	2	5	2	10	2·0	F	+14·0	+30·7	+19·6	Indirect comparison; spectrum bright and steady.
1878 Feb. 25	M.	2	6	I	95	...	F	+12·3	+15·6	+20·0	Indirect comp.; spectrum tremulous.
						r					
Mar. 16	W.C.	2	0	I	120	0·073	b_1	+15·7	(−59·8)	(−25·2)	Indirect comp.; star lines very faint; observations discordant *inter se*.
25	M.	2	8	I	95	0·141	F	+16·7	+ 7·5	+10·3	Indirect comparison; definition good.
30	M.	2	5	I	5	0·123	F	+17·2	+39·6	+46·2	Indirect comp.; definition poor.
Apr. 20	M.	2	4	II	5	0·100	F	+17·4	+16·4	+34·2	Indirect comparison; much interrupted by light cloud.
Mean	Ten-prism Spectroscope								+42·8	+35·3	Weight 24.
Mean	Half-prism Spectroscope								+22·0	+22·6	Weight 23.
Pollux.											
1877 Feb. 28	M.	2	2	2	6	d d 1·0 & 1·8	b_1	+13·8	−52·1	−89·8	Indirect comparison; definition poor; Moon bright.
						d					
Mar. 10	M.	2	6	4	2½	2·6	b_1	+15·7	−30·2	−45·7	Indirect comparison.
1878 Feb. 18	M.	4	12	I	6	...	b_1	+11·5	+ 6·2	+ 7·7	Indirect comparison; definition variable; observations discordant *inter se*.
25	M.	1	1	I	95	...	b_1	+13·1	+15·7	+15·3	Indirect comparison; spectrum tremulous; definition bad.
						r					
Mar. 13	W.C.	2	3	I	90	0·120	b_1	+16·1	−56·2	−34·9	Indirect comparison.

		15	M.	3	5	I	5	0·085	b_1	+16·4	+ 9·2	+10·4	Indirect comparison; definition variable.
		16	W.C.	2	6	I	120	0·073	b_1	+16·5	−20·4	−25·2	Indirect comparison.
		25	M.	4	8	I	95	0·141	F	+17·5	−52·3	−49·8	Indirect comp.; definition deteriorating.
		30	M.	2	3	I	5	0·123	F	+17·9	−33·3	−34·2	Indirect comparison; definition poor.
	Apr.	1	M.	4	13	I	5	0·128	b_1	+18·0	−28·0	−31·1	Indirect comparison.
		7	W.C.	3	6	II	90	0·070	b_1	+18·1	−35·6	−26·3	Indirect comparison; star line seen pretty distinctly.
		8	M.	3	3	II	5	0·072	b_1	+18·1	−23·0	−25·9	Indirect comp.; spectrum very tremulous.
							Mean	Ten-prism Spectroscope			−35·7	−56·7	Weight 8.
								Half-prism Spectroscope			−22·0	−20·5	Weight 60.
								α Hydræ.					
1878	Mar.	13	W.C.	3	4½	I	90	r 0·120	b_1	+ 8·0	+57·6	+24·2	Indirect comparison.
								ε Leonis.					
1878	Apr.	1	M.	2	3	I	5	0·128	b_1	+14·5	−30·4	−36·3	Indirect comparison; star line distinct, but spectrum faint and tremulous.
								Regulus.					
1877	Mar.	5	M.	1	3	2	10	d 1·7	F	+ 5·6	+25·7	+23·7	Indirect comparison.
1878	Mar.	30	M.	2	6	I	5	r 0·073	F	+12·3	+18·5	+18·6	Indirect comparison.
	Apr.	11	M.	3	10	I	5	0·027	F	+14·8	+26·6	+21·6	Indirect comparison; definition fair.
							Mean	Ten-prism Spectroscope			+30·7	+32·1	Weight 25.
								Half-prism Spectroscope			+23·6	+20·5	Weight 16.

Date.	Observer.	No. of Measures.	Weight.	No. of Prisms.	Position-Circle.	Width of Slit.	Line.	Earth's Motion in Miles per Sec.	Concluded Motion of Star. Measured.	Concluded Motion of Star. Estimated.	Remarks.
					°	r					
γ Leonis.											
1878 Mar. 13	W.C.	3	4	I	90	0·120	b_1	+ 7·9	−13·5	− 3·4	Observations discordant *inter se.*
Apr. 1	M.	2	7	I	5	0·096	b_1	+12·7	−42·5	−40·4	Indirect comparison.
8	M.	3	3	II	5	0·072	b_1	+14·1	−20·8	−23·2	Indirect comparison.
Mean	Ten-prism Spectroscope								−54·7	−54·0	Weight 8.
Mean	Half-prism Spectroscope								−29·6	−26·1	Weight 14.
β Ursæ Majoris.											
						d d					
1877 Apr. 14	M.	2	6	2	5	3·9 & 3·6	F	+11·9	+22·2	+30·8	Indirect comp.; spectrum fairly defined.
						d					
May 2	M.	2	6	2	3	3·0	F	+12·7	+41·1	+48·9	Indirect comparison; star spectrum and line well seen.
Ten-prism Spectroscope									+28·3	+32·2	Weight 21.
β Leonis.											
						r					
1878 Mar. 25	M.	2	4	I	95	0·141	F	+ 4·8	+44·3	+53·4	Indirect comparison; definition poor.
30	M.	3	8	I	5	0·073	F	+ 6·2	+57·0	+54·6	Indirect comparison.
Mean	Ten-prism Spectroscope								−32·7	−31·0	Weight 2.
Mean	Half-prism Spectroscope								+52·8	+54·2	Weight 12.
γ Ursæ Majoris.											
						d					
1877 May 2	M.	2	6	2	3	3·2	F	+11·8	+24·9	+20·4	Indirect comparison; star spectrum and line well seen.

							δ Ursæ Majoris.				
1877	May 2	M.	8	4	2	3	3·3	F	+ 10·8	+ 3·9	+ 0·1	Indirect comp.; spectrum very faint.
							γ Virginis.				
1878	Apr. 11	M.	2	3	I	5	r 0·072	F	+ 4·3	+ 31·8	+ 26·0	Indirect comparison; definition fair.
							ε Ursæ Majoris.				
1877	May 2	M.	2	6	2	3	d 3·3	F	+ 9·6	+ 5·9	+ 12·3	Indirect comparison.
							α Virginis.				
1878	Mar. 30	M.	4	10	I	5	r 0·073	F	− 3·8	− 0·5	− 2·3	Indirect comparison; definition fair.
	Apr. 11	M.	2	2	I	5	0·072	F	0·0	+ 26·8	+ 25·3	Indirect comparison; definition bad.
	May 11	M.	2	4	I	5	...	F	+ 8·7	− 9·3	− 8·7	Indirect comp.; spectrum exceedingly tremulous.
							Mean { Ten-prism Spectroscope			+ 37·9	+ 50·9	Weight 4.
							Mean { Half-prism Spectroscope			+ 0·7	− 0·5	Weight 16.
							ζ Ursæ Majoris.				
1877	May 2	M.	2	6	2	3	d 3·0	F	+ 8·6	+ 5·5	+ 16·1	Indirect comparison; star spectrum well defined.
							η Boötis.				
1878	Apr. 1	M.	2	4	I	5	r 0·128	b_1	− 1·5	− 33·4	− 34·9	Indirect comparison.

Date.	Observer.	No. of Measures.	Weight.	No. of Prisms.	Position-Circle. °	Width of Slit.	Line.	Earth's Motion in Miles per Sec.	Concluded Motion of Star. Measured.	Concluded Motion of Star. Estimated.	Remarks.
						Arcturus.					
1877 Mar. 5	M.	2	7	4	5½	d 2·5	b_1	− 9·6	−16·2	−50·9	Indirect comparison; lines fairly well defined.
1878 Mar. 30	M.	4	16	I	5	r 0·073	F	− 3·3	−17·2	−16·9	Indirect comparison; spectrum steady; definition fair.
Apr. 7	W.C.	2	2	II	90	0·070	b_1	− 1·2	−10·3	− 7·8	Indirect comparison.
8	M.	3	12	II	5	0·072	b_1	− 0·9	−18·3	−20·7	Indirect comp.; definition very good.
Mean	Ten-prism Spectroscope								−36·2	−45·1	Weight 73.
Mean	Half-prism Spectroscope								−17·2	−17·8	Weight 30.
						ϵ_2 Boötis.					
1878 Apr. 1	M.	3	9	I	5	r 0·096	b_1	− 3·4	−26·3	−24·3	Indirect comparison; definition fair.
Mean	Ten-prism Spectroscope								+ 4·1	− 2·3	Weight 21.
Mean	Half-prism Spectroscope								−26·3	−24·3	Weight 9.
						α Coronæ.					
1877 Aug. 31	M.	3	8	I	...	...	F	+11·4	+54·4	+67·9	Indirect comparison.
1878 Mar. 25	M.	3	6	I	95	r 0·141	F	− 7·6	+54·3	+54·4	Indirect comparison; definition only occasionally good.
Mean	Ten-prism Spectroscope								+36·0	+39·7	Weight 13.
Mean	Half-prism Spectroscope								+55·4	+62·1	Weight 6.

							α Ophiuchi.				
1877 Aug. 31	M.	2	8	I	...	...	F	+14·3	+61·3	+89·6	Direct comparison.
1878 Apr. 11	M.	3	3	I	5	r 0·072	F	−12·7	− 9·0	− 7·5	Indirect comparison; star line very difficult to bisect.
							α Lyræ.				
1876 Dec. 6	M.	2	5	6	6	d d 4·7 & 2·6	F	+ 4·3	−49·8	−43·8	Indirect comparison.
						Ten-prism Spectroscope			−39·1	−34·6	Weight 92.
							ζ Aquilæ.				
1876 Nov. 17	M.	2	3	2	6	3·0 & 3·9	F	+11·9	...	−66·9	Direct comp.; definition fairly good.
1877 Aug. 23	M.	3	9	I	...	...	F	+ 9·9	−60·3	−70·3	Indirect comparison.
							γ Aquilæ.				
1877 Nov. 14	M.	2	5	I	95	...	b_1	+14·8	− 3·7	− 2·6	Indirect comparison.
							γ Cygni.				
1877 Nov. 14	M.	2	2½	I	95	...	b_1	+10·2	−27·9	−40·5	Indirect comparison; definition bad.
						Ten-prism Spectroscope			−19·7	−20·4	Weight 24½.
							α Cygni.				
1877 Nov. 14	M.	2	7	I	95	...	b_2, b_1	+ 9·3	−69·5	−61·3	Indirect comp.; definition improving.
						Ten-prism Spectroscope			−40·2	−41·3	Weight 40.

Date.	Observer.	No. of Measures.	Weight.	No. of Prisms.	Position-Circle.	Width of Slit.	Line.	Earth's Motion in Miles per Sec.	Concluded Motion of Star. Measured.	Concluded Motion of Star. Estimated.	Remarks.
					°	d					
ε Cygni.											
1877 Nov. 14	M.	2	4	I	95	...	b_1	+12·2	+24·2	+25·7	Indirect comparison; definition poor.
				Ten-prism Spectroscope					+11·8	+14·9	Weight 3½.
Moon.											
1878 Jan. 17	M.	4	...	I	5	...	b_1	...	−0·7	...	Lines in the spectrum of the Moon rather faint.
						r					
Feb. 17	W.C.	1	...	I	0	0·156	F	...	−6·3	0·0	
Mar. 13	W.C.	4	...	I	90	...	b_1	...	−1·9		
16	W.C.	4	...	I	120	...	b_1	...	−6·4		
Apr. 8	M.	6	...	II	5	0·072	b_1, b_2, b_4	...	0·0		
11	M.	4	...	I	5	...	F	...	0·0		
May 8	M.	4	...	II	5	...	F	...	+0·3	...	The coincidence of the two spectra very perfect.
11	M.	4	...	I	5	...	F	...	+0·1		
Sky Spectrum.											
1878 Apr. 2	M.	15	...	I	5	...	b_1	...	+1·8		
8	W.C.	3	...	II	90	...	b_1, b_2, b_4	...	+3·0		
8	M.	6	...	II	90	...	b_1, b_2, b_4	...	+1·7		
9	M.	8	...	II	5	...	b_1, b_2, b_4	...	+0·8		

As the results with the half-prism spectroscope are quite independent of those formerly obtained, it may be interesting to compare the two sets obtained at Greenwich with those of Dr. Huggins. The following table gives the comparison of the motions found for 51 stars, all of which have been spectroscopically examined at Greenwich. Where no number is set down the result is to be considered as still somewhat uncertain.

The agreement appears to be as satisfactory as can be expected in such delicate observations.

Motions of Stars in the Line of Sight.

\+ denotes recession ; − approach.

The weights are on a scale 1 to 5 for *each* observation.

Star's Name.	Dr. Huggins' Results.	Ten-prism Spectroscope.		Half-prism Spectroscope.	
		Results.	Weight.	Results.	Weight.
α Andromedæ	−	−45	16		
α Arietis				+	6
Aldebaran	+	+	½	+19	22
Capella	+	+24	18	+30	29
β Orionis	+15	+19	8	+21	22½
β Tauri				−	3
γ Orionis				0	15
δ Orionis				+18	5
ε Orionis		−	6	+23	7
ζ Orionis				+	2
α Orionis	+22	+17	11	+22	39
β Aurigæ				+	2
Sirius	+18 to 22	+22	29	+26	15
Castor	+23 to 28	+24	19	+35	11
Procyon	+	+33	24	+22	23
Pollux	−49	−46	8	−21	60
α Hydræ				+	4½
ε Leonis				−	3
Regulus	+12 to 17	+31	25	+22	16
γ Leonis	−	−54	8	−28	14
β Ursæ Majoris	+17 to 21	+30	21		
α Ursæ Majoris	−46 to 60	−	4		
β Leonis	+	−	2	+53	12
γ Ursæ Majoris	+17 to 21	+	6		
δ Ursæ Majoris	+17 to 21	+	4		
γ Virginis				+	3

Star's Name.	Dr. Huggins' Results.	Ten-prism Spectroscope.		Half-prism Spectroscope.	
		Results.	Weight.	Results.	Weight.
δ Ursæ Majoris	+17 to 21	+	6		
α Virginis	+	+	4	0	16
ζ Ursæ Majoris	+ 17 to 21	+	6		
η Ursæ Majoris	+	−32	7		
η Boötis				−	4
Arcturus	−55	−41	73	−18	30
ϵ_2 Boötis		+ 1	21	−	9
α Coronæ	+	+38	13	+58	14
β Herculis		−	3		
α Herculis		−31	$5\frac{1}{2}$		
β Draconis		+ 7	$1\frac{1}{2}$		
α Ophiuchi		?		?	
γ Draconis		−18	$14\frac{1}{2}$		
α Lyræ	−44 to 54	−37	92		
ζ Aquilæ		?		−	9
γ Aquilæ		−	1	−	5
δ Cygni		−23	12		
α Aquilæ		?			
γ Cygni	−	−20	$24\frac{1}{2}$	−	$2\frac{1}{2}$
α Cygni	−39	−41	40	−	7
ϵ Cygni		+13	$3\frac{1}{2}$	+	4
ϵ Pegasi		−24	$11\frac{1}{2}$		
Fomalhaut		?			
β Pegasi		+20	10		
α Pegasi	−	−22	16		

Royal Observatory, Greenwich,
1878, *June* 14.

On the Photographs of the Transit of Venus,

By Captain G. L. Tupman, R.M.A.

(*Communicated by the Astronomer Royal*).

The photographs that have been measured were taken with the five Photoheliographs made by Mr. Dallmeyer for the Transit of *Venus* Expeditions on "Patent Plates," 6 inches square, the images of the Sun being very nearly 3·9 inches in diameter. The Dry process of Captain Abney, R.E., described in the *Monthly Notices*, vol. xxxiv., p. 275, was used throughout.